

Amendments to the Claims:

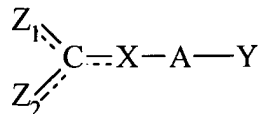
This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-85 (Canceled).

86. [Currently Amended] A method for treating Parkinson's disease in a subject, comprising:

administering to a subject a therapeutically effective amount of a combination of creatine, a creatine phosphate or a creatine compound and a neuroprotective agent, such that Parkinson's disease in said subject is treated, wherein said neuroprotective agent is selected from the group consisting of inhibitors of glutamate excitotoxicity, 2,3 dimethoxy-5-methyl-6-decaprenyl benoquinone, nicotinamide, spin traps, growth factors, nitric oxide synthase inhibitors, cyclooxygenase 2 inhibitors, aspirin, ICE inhibitors, neuroimmunophilis, N-acetylcysteine, antioxidants, lipoic acid, cofactors, riboflavin, and CoQ10, wherein said creatine compound has the formula:



and pharmaceutically acceptable salts thereof, wherein:

a) ~~Y is selected from the group consisting of: -CO₂H, -NHOH, -NO₂, -SO₃H, C(=O)NHSO₂J and P(=O)(OH)(OJ), wherein J is selected from the group consisting of: hydrogen, C₁-C₆ straight chain alkyl, C₃-C₆ branched alkyl, C₂-C₆ alkenyl, C₃-C₆ branched alkenyl, and aryl;~~

b) A is selected from the group consisting of: C, CH, C₁-C₅alkyl, C₂-C₅alkenyl, C₂-C₅alkynyl, and C₁-C₅ alkoyl chain, each having 0-2 substituents which are selected independently from the group consisting of:

1) K, where K is selected from the group consisting of: C₁-C₆ straight alkyl, C₂-C₆ straight alkenyl, C₁-C₆ straight alkoyl, C₃-C₆ branched alkyl,

C₃-C₆ branched alkenyl, and C₄-C₆ branched alkoyl, K having 0-2 substituents independently selected from the group consisting of: bromo, chloro, epoxy and acetoxy;

~~_____ 2) _____ an aryl group, wherein the aryl group is a 1-2 ring carbocycle and contains 0-2 substituents independently selected from the group consisting of: CH₂L and -COCH₂L where L is independently selected from the group consisting of: bromo, chloro, epoxy and acetoxy; and~~

23) -NH-M, wherein M is selected from the group consisting of: hydrogen, C₁-C₄ alkyl, C₂-C₄ alkenyl, C₁-C₄ alkoyl, C₃-C₄ branched alkyl, C₃-C₄ branched alkenyl, and C₄ branched alkoyl;

c) X is ~~selected from the group consisting of NR₁, CHR₁, CR₁, O and S,~~ wherein R₁ is selected from the group consisting of:

1) hydrogen;

2) K where K is selected from the group consisting of: C₁-C₆ straight alkyl, C₂-C₆ straight alkenyl, C₁-C₆ straight alkoyl, C₃-C₆ branched alkyl, C₃-C₆ branched alkenyl, and C₄-C₆ branched alkoyl, K having 0-2 substituents independently selected from the group consisting of: bromo, chloro, epoxy and acetoxy;

~~_____ 3) _____ an aryl group, wherein the aryl group is a 1-2 ring carbocycle and contains 0-2 substituents independently selected from the group consisting of: CH₂L and -COCH₂L where L is independently selected from the group consisting of: bromo, chloro, epoxy and acetoxy;~~

~~_____ 4) _____ a C₅-C₉-a-amino-w-methyl-w-adenosylcarboxylic acid attached via the w-methyl carbon;~~

~~_____ 5) _____ a C₅-C₉-a-amino-w-aza-w-methyl-w-adenosylcarboxylic acid attached via the w-methyl carbon; and~~

~~_____ 6) _____ a C₅-C₉-a-amino-w-thia-w-methyl-w-adenosylcarboxylic acid attached via the w-methyl carbon;~~

d) Z_1 and Z_2 are chosen independently from the group consisting of: $=O$, $-NHR_2$, $-CH_2R_2$, $-NR_2OH$; wherein Z_1 and Z_2 may not both be $=O$ and wherein R_2 is selected from the group consisting of:

1) hydrogen;

2) K, where K is selected from the group consisting of: C_1 - C_6 straight alkyl; C_2 - C_6 straight alkenyl, C_1 - C_6 straight alkoyl, C_3 - C_6 branched alkyl, C_3 - C_6 branched alkenyl, and C_4 - C_6 branched alkoyl, K having 0-2 substituents independently selected from the group consisting of: bromo, chloro, epoxy and acetoxy;

~~3) an aryl group, wherein the aryl group is a 1-2 ring carbocycle and contains 0-2 substituents independently selected from the group consisting of: $-CH_2L$ and $-COCH_2L$ where L is independently selected from the group consisting of: bromo, chloro, epoxy and acetoxy;~~

34) a C_4 - C_8 α -amino-carboxylic acid attached via the ω -carbon; and

45) B, wherein B is selected from the group consisting of: $-CO_2H$, $-NHOH$, $-SO_3H$, and $-NO_2$, $OP(=O)(OH)(OJ)$ and $P(=O)(OH)(OJ)$, wherein J is selected from the group consisting of: hydrogen, C_1 - C_6 straight alkyl, C_3 - C_6 branched alkyl, C_2 - C_6 alkenyl, C_3 - C_6 branched alkenyl, and aryl, wherein B is optionally connected to the nitrogen via a linker selected from the group consisting of: C_1 - C_2 alkyl, C_2 alkenyl, and C_1 - C_2 alkoyl;

~~6) D-E, wherein D is selected from the group consisting of: C_1 - C_3 straight alkyl, C_3 branched alkyl, C_2 - C_3 straight alkenyl, C_3 branched alkenyl, C_1 - C_3 straight alkoyl, aryl and aroyl; and E is selected from the group consisting of: $-(PO_3)_nNMP$, where n is 0-2 and NMP is ribonucleotide monophosphate connected via the 5' phosphate, 3' phosphate or the aromatic ring of the base; $[P(=O)(OCH_3)(O)]_m-Q$, where m is 0-3 and Q is a ribonucleoside connected via the ribose or the aromatic ring of the base; $[P(=O)(OH)(CH_2)]_m-Q$, where m is 0-3 and Q is a ribonucleoside connected via the ribose or the aromatic ring of the base; and an aryl group containing 0-3 substituents chosen independently from the group consisting of: Cl, Br, epoxy, acetoxy, $-OG$, $C(=O)G$, and $-CO_2G$, where G is independently selected from the group consisting of: C_1 - C_6 straight alkyl, C_2 - C_6 straight alkenyl, C_1 - C_6 straight alkoyl, C_3 - C_6 branched~~

alkyl, C₃-C₆-branched alkenyl, C₄-C₆-branched alkoyl, wherein E may be attached to any point to D, and if D is alkyl or alkenyl, D may be connected at either or both ends by an amide linkage; and

~~7) E, wherein E is selected from the group consisting of~~
~~(P(O)₃)_nNMP, where n is 0-2 and NMP is a ribonucleotide monophosphate connected via the 5' phosphate, 3' phosphate or the aromatic ring of the base; [P(=O)(OCH₃)(O)]_m-Q, where m is 0-3 and Q is a ribonucleoside connected via the ribose or the aromatic ring of the base; [P(=O)(OH)(CH₂)]_m-Q, where m is 0-3 and Q is a ribonucleoside connected via the ribose or the aromatic ring of the base; and an aryl group containing 0-3 substituents chosen independently from the group consisting of: C₁, Br, epoxy, acetoxy, -OG, C(=O)G, and CO-G, where G is independently selected from the group consisting of: C₁-C₆-straight alkyl, C₂-C₆-straight alkenyl, C₁-C₆-straight alkoyl, C₃-C₆-branched alkyl, C₃-C₆-branched alkenyl, C₄-C₆-branched alkoyl; and if E is aryl, E may be connected by an amide linkage;~~

~~e) if R₁ and at least one R₂ group are present, R₁ may be connected by a single or double bond to an R₂ group to form a cycle of 5 to 7 members;~~

~~f) if two R₂ groups are present, they may be connected by a single or a double bond to form a cycle of 4 to 7 members; and~~

~~g) if R₁ is present and Z₁ or Z₂ is selected from the group consisting of NHR₂, CH₂R₂ and NR₂OH, then R₁ may be connected by a single or double bond to the carbon or nitrogen of either Z₁ or Z₂ to form a cycle of 4 to 7 members.~~

Claims 87-90 (Cancelled).

91. [Currently Amended] The method of claim 86 or 133, wherein said neuroprotective agent is a spin trap.

92. [Previously Presented] The method of claim 91, wherein said spin trap is PBN.

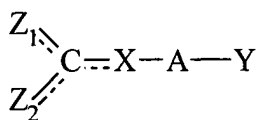
93. [Currently Amended] The method of claim 86 or 133, wherein said neuroprotective agent is a cofactor for normal cellular metabolism.

94. [Previously Presented] The method of claim 93, wherein said cofactor is carnitine.
95. [Currently Amended] The method of claim 86 or 133, wherein said neuroprotective agent is an antioxidant.
96. [Previously Presented] The method of claim 95, wherein said antioxidant is vitamin E.
97. [Cancelled]
98. [Currently Amended] The method of claim 86 or 133, wherein said neuroprotective agent is riboflavin.
99. [Currently Amended] The method of claim 86 or 133, further comprising administering at least one additional neuroprotective agent or creatine compound.
100. [Currently Amended] The method of claim 86 or 133, wherein said creatine compound is creatine.

Claims 101-107 (Canceled).

108. [Currently Amended] A method for treating Huntington's disease in a subject, comprising:

administering to a subject a therapeutically effective amount of a combination of creatine, a creatine phosphate or a creatine compound and a neuroprotective agent, such that Huntington's disease is treated, wherein said neuroprotective agent is selected from the group consisting of inhibitors of glutamate excitotoxicity, 2,3 dimethoxy-5-methyl-6-decaprenyl benoquinone, nicotinamide, spin traps, growth factors, nitric oxide synthase inhibitors, cyclooxygenase 2 inhibitors, aspirin, ICE inhibitors, neuroimmunophilis, N-acetylcysteine, antioxidants, lipoic acid, cofactors, riboflavin, and CoQ10, wherein said creatine compound has the formula:



and pharmaceutically acceptable salts thereof, wherein:

a) ~~Y is selected from the group consisting of: -CO₂H, -NHOH, -NO₂, -SO₃H, C(=O)NHSO₂J and P(=O)(OH)(OJ), wherein J is selected from the group consisting of: hydrogen, C₁-C₆ straight chain alkyl, C₃-C₆ branched alkyl, C₂-C₆ alkenyl, C₃-C₆ branched alkenyl, and aryl;~~

b) A is selected from the group consisting of: C, CH, C₁-C₅alkyl, C₂-C₅alkenyl, C₂-C₅alkynyl, and C₁-C₅ alkoyl chain, each having 0-2 substituents which are selected independently from the group consisting of:

1) K, where K is selected from the group consisting of: C₁-C₆ straight alkyl, C₂-C₆ straight alkenyl, C₁-C₆ straight alkoyl, C₃-C₆ branched alkyl, C₃-C₆ branched alkenyl, and C₄-C₆ branched alkoyl, K having 0-2 substituents independently selected from the group consisting of: bromo, chloro, epoxy and acetoxy;

~~2) an aryl group, wherein the aryl group is a 1-2 ring carbocycle and contains 0-2 substituents independently selected from the group consisting of: -CH₂L and -COCH₂L where L is independently selected from the group consisting of: bromo, chloro, epoxy and acetoxy; and~~

23) -NH-M, wherein M is selected from the group consisting of: hydrogen, C₁-C₄ alkyl, C₂-C₄ alkenyl, C₁-C₄ alkoyl, C₃-C₄ branched alkyl, C₃-C₄ branched alkenyl, and C₄ branched alkoyl;

c) ~~X is selected from the group consisting of NR₁, -CHR₁, -CR₁, -O and -S,~~
wherein R₁ is selected from the group consisting of:

1) hydrogen;

2) K where K is selected from the group consisting of: C₁-C₆ straight alkyl, C₂-C₆ straight alkenyl, C₁-C₆ straight alkoyl, C₃-C₆ branched alkyl, C₃-C₆

branched alkenyl, and C₄-C₆ branched alkoyl, K having 0-2 substituents independently selected from the group consisting of: bromo, chloro, epoxy and acetoxy;

~~3) an aryl group, wherein the aryl group is a 1-2 ring carbocycle and contains 0-2 substituents independently selected from the group consisting of: -CH₂L and -COCH₂L where L is independently selected from the group consisting of: bromo, chloro, epoxy and acetoxy;~~

~~4) a C₅-C₉ a-amino-w-methyl-w-adenosylcarboxylic acid attached via the w-methyl carbon;~~

~~5) a C₅-C₉ a-amino-w-aza-w-methyl-w-adenosylcarboxylic acid attached via the w-methyl carbon; and~~

~~6) a C₅-C₉ a-amino-w-thia-w-methyl-w-adenosylcarboxylic acid attached via the w-methyl carbon;~~

d) Z₁ and Z₂ are chosen independently from the group consisting of: =O, -NHR₂, ~~-CH₂R₂, -NR₂OH;~~ wherein ~~Z₁ and Z₂ may not both be =O~~ and wherein R₂ is selected from the group consisting of:

1) hydrogen;

2) K, where K is selected from the group consisting of: C₁-C₆ straight alkyl; C₂-C₆ straight alkenyl, C₁-C₆ straight alkoyl, C₃-C₆ branched alkyl, C₃-C₆ branched alkenyl, and C₄-C₆ branched alkoyl, K having 0-2 substituents independently selected from the group consisting of: bromo, chloro, epoxy and acetoxy;

~~3) an aryl group, wherein the aryl group is a 1-2 ring carbocycle and contains 0-2 substituents independently selected from the group consisting of: -CH₂L and -COCH₂L where L is independently selected from the group consisting of: bromo, chloro, epoxy and acetoxy;~~

34) a C₄-C₈ a-amino-carboxylic acid attached via the w-carbon; and

45) B, wherein B is selected from the group consisting of: $-\text{CO}_2\text{H}$, $-\text{NHOH}$, $-\text{SO}_3\text{H}$, and $-\text{N}_02$, $\text{OP}(=\text{O})(\text{OH})(\text{OJ})$ and $\text{P}(=\text{O})(\text{OH})(\text{OJ})$, wherein J is selected from the group consisting of: hydrogen, C_1 - C_6 straight alkyl, C_3 - C_6 branched alkyl, C_2 - C_6 alkenyl, C_3 - C_6 branched alkenyl, and aryl, wherein B is optionally connected to the nitrogen via a linker selected from the group consisting of: C_1 - C_2 alkyl, C_2 alkenyl, and C_1 - C_2 alkoyl;

~~6) D E, wherein D is selected from the group consisting of: C_1 - C_3 straight alkyl, C_3 branched alkyl, C_2 - C_3 straight alkenyl, C_3 branched alkenyl, C_1 - C_3 straight alkoyl, aryl and aroyl; and E is selected from the group consisting of: $(\text{PO}_3)_n\text{NMP}$, where n is 0-2 and NMP is ribonucleotide monophosphate connected via the 5' phosphate, 3' phosphate or the aromatic ring of the base; $[\text{P}(=\text{O})(\text{OCH}_3)(\text{O})]_m\text{Q}$, where m is 0-3 and Q is a ribonucleoside connected via the ribose or the aromatic ring of the base; $[\text{P}(=\text{O})(\text{OH})(\text{CH}_2)]_m\text{Q}$, where m is 0-3 and Q is a ribonucleoside connected via the ribose or the aromatic ring of the base; and an aryl group containing 0-3 substituents chosen independently from the group consisting of: Cl, Br, epoxy, acetoxy, $-\text{OG}$, $\text{C}(=\text{O})\text{G}$, and $-\text{CO}_2\text{G}$, where G is independently selected from the group consisting of: C_1 - C_6 straight alkyl, C_2 - C_6 straight alkenyl, C_1 - C_6 straight alkoyl, C_3 - C_6 branched alkyl, C_3 - C_6 branched alkenyl, C_4 - C_6 branched alkoyl, wherein E may be attached to any point to D, and if D is alkyl or alkenyl, D may be connected at either or both ends by an amide linkage; and~~

~~7) E, wherein E is selected from the group consisting of $(\text{PO}_3)_n\text{NMP}$, where n is 0-2 and NMP is a ribonucleotide monophosphate connected via the 5' phosphate, 3' phosphate or the aromatic ring of the base; $[\text{P}(=\text{O})(\text{OCH}_3)(\text{O})]_m\text{Q}$, where m is 0-3 and Q is a ribonucleoside connected via the ribose or the aromatic ring of the base; $[\text{P}(=\text{O})(\text{OH})(\text{CH}_2)]_m\text{Q}$, where m is 0-3 and Q is a ribonucleoside connected via the ribose or the aromatic ring of the base; and an aryl group containing 0-3 substituents chose independently from the group consisting of: Cl, Br, epoxy, acetoxy, $-\text{OG}$, $\text{C}(=\text{O})\text{G}$, and $-\text{CO}=\text{G}$, where G is independently selected from the group consisting of: C_1 - C_6 straight alkyl, C_2 - C_6 straight alkenyl, C_1 - C_6 straight alkoyl, C_3 - C_6 branched alkyl, C_3 - C_6 branched alkenyl, C_4 - C_6 branched alkoyl; and if E is aryl, E may be connected by an amide linkage;~~

~~e) if R_1 and at least one R_2 group are present, R_1 may be connected by a single or double bond to an R_2 group to form a cycle of 5 to 7 members;~~

~~— f) — if two R_2 groups are present, they may be connected by a single or a double bond to form a cycle of 4 to 7 members; and~~

~~— g) — if R_1 is present and Z_1 or Z_2 is selected from the group consisting of NHR_2 , CH_2R_2 and NR_2OH , then R_1 may be connected by a single or double bond to the carbon or nitrogen of either Z_1 or Z_2 to form a cycle of 4 to 7 members.~~

Claims 109-112 (Cancelled).

113. [Currently Amended] The method of claim 108 or 134, wherein said neuroprotective agent is a spin trap.

114. [Previously Presented] The method of claim 113, wherein said spin trap is PBN.

115. [Currently Amended] The method of claim 108 or 134, wherein said cofactor is a cofactor for normal cellular metabolism.

116. [Previously Presented] The method of claim 115, wherein said cofactor is carnitine.

117. [Currently Amended] The method of claim 108 or 134, wherein said neuroprotective agent is an antioxidant.

118. [Previously Presented] The method of claim 117, wherein said antioxidant is vitamin E.

119. [Cancelled].

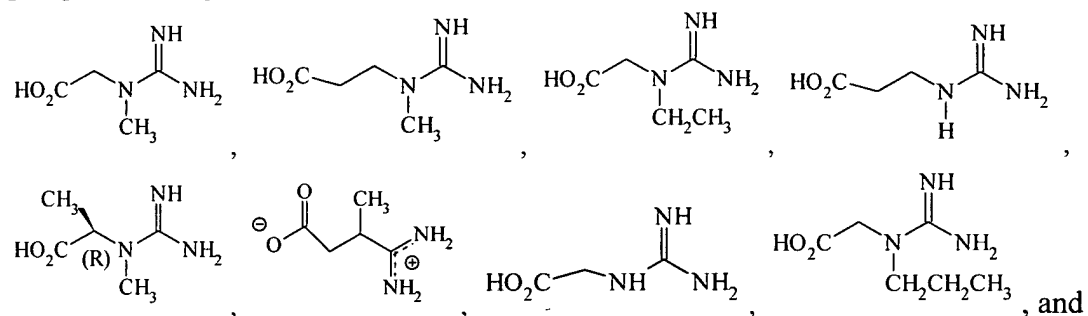
120. [Previously Presented] The method of claim 117, wherein said neuroprotective agent is riboflavin.

121. [Currently Amended] The method of claim 108 or 134, further comprising administering at least one additional neuroprotective agent or creatine compound.

122. [Currently Amended] The method of claim 108 or 134, wherein said creatine compound is creatine.

Claim 123-132 (Canceled).

133. [New] A method for treating Parkinson's disease in a subject, comprising:
administering to a subject a therapeutically effective amount of a combination of creatine, a creatine phosphate or a creatine compound and a neuroprotective agent, such that Parkinson's disease in said subject is treated, wherein said neuroprotective agent is selected from the group consisting of inhibitors of glutamate excitotoxicity, 2,3 dimethoxy-5-methyl-6-decaprenyl benoquinone, nicotinamide, spin traps, growth factors, nitric oxide synthase inhibitors, cyclooxygenase 2 inhibitors, aspirin, ICE inhibitors, neuroimmunophilis, N-acetylcysteine, antioxidants, lipoic acid, cofactors, riboflavin, and CoQ10, wherein said creatine compound is selected from the group consisting of:



pharmaceutically acceptable salts thereof.

134. [New] A method for treating Huntington's disease in a subject, comprising:
administering to a subject a therapeutically effective amount of a combination of creatine, a creatine phosphate or a creatine compound and a neuroprotective agent, such that Huntington's disease is treated, wherein said neuroprotective agent is selected from the group consisting of inhibitors of glutamate excitotoxicity, 2,3 dimethoxy-5-methyl-6-decaprenyl benoquinone, nicotinamide, spin traps, growth factors, nitric oxide synthase inhibitors, cyclooxygenase 2 inhibitors, aspirin, ICE inhibitors, neuroimmunophilis, N-acetylcysteine, antioxidants, lipoic acid, cofactors, riboflavin, and CoQ10, wherein said creatine compound is selected from the group consisting of:

